

REMARKS

Claims 1-26 are pending herein.

Claims 1-26 are rejected.

Claims 1, 13, 18, 20 and 22 are currently amended.

Drawings

The drawings were objected to because Figure 2 includes a circle that is labeled as "1", which was also used to indicate the centralizer, and therefore, cannot be used to indicate another feature. It was stated that, since the Brief Description of Figure 1 indicates that the circle is a "section line", it was suggested that either the label of the circle be changed to 1-1 or the Brief Description of Figure 1 be changed to indicate that the figure is an enlarged perspective view taken at the circle shown in Figure 2.

It will be noted that the Brief Description of Figure 1 has been changed, by amendment of the specification, to indicate that "Figure 1 is an enlarged perspective view of an illustrative embodiment of the multi-unit centralizer of the present invention, taken at the circle labeled '1' shown in FIG. 2".

Therefore, it is respectfully submitted that the amendment to the specification, in the manner suggested by the Examiner, overcomes the basis for the objection to the drawings. Reconsideration of the drawings is therefore respectfully solicited.

The drawings were further objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the reference sign "32" mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d) were required in reply to the Office action to avoid

abandonment of the application.

It will be noted that reference numeral "32" appears toward the bottom of Figure 2 of the original drawing figures and indicates the packing material at the bottom of the well bore (29).

Therefore, since reference numeral "32" appears in the original drawings as filed, reconsideration and withdrawal of the objection to the drawings as failing to comply with 37 CFR 1.84(p)(5) is respectfully solicited.

The drawings were further objected to as failing to comply with 37 CFR 1.84(p)(5) because they include reference numeral "35", which is not mentioned in the specification. Corrected drawings sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b), were required in reply to the Office action to avoid abandonment of the application.

It will be noted that reference numeral "35", which indicates a rotary table in Figure 2 of the drawings, appears in line 16 of page 8 in the specification.

Therefore, since reference numeral "35" appears in the original specification and drawings as filed, reconsideration and withdrawal of the objection to the drawings as failing to comply with 37 CFR 1.84(p)(5) is respectfully solicited.

Specification

The abstract of the disclosure was objected to because the last sentence of the abstract includes purported merits of the invention. Correction was required.

It will be noted that the last sentence of the abstract of the disclosure has been deleted.

Therefore, reconsideration and withdrawal of the objection to the abstract of the disclosure is respectfully solicited.

The disclosure was objected to because a portion of the disclosure appears to be missing as page 10 does not end with a complete sentence.

It will be noted that the sentence at the bottom of page 10 is continued on the top of page 11 of the specification as filed. Reconsideration and withdrawal of the objection to the specification is therefore respectfully solicited.

Claim rejections under 35 U.S.C. 112

Claims 13 and 20 were rejected under 35 U.S.C. 112, 2nd paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It was stated that claims 13 and 20 are considered indefinite because the last line of both claims recite “with at least three of said plurality of spacer lugs removably engaging said centralizer hub” and the spacer lugs are described early in each claim as all being removably engaged with the centralizer hub. It was stated that it is unclear how only a portion of them need be removably engaged with the hub.

It will be noted that claim 13 has been amended to recite “a plurality of spacer lugs capable of removably and interchangeably engaging said centralizer hub...wherein said plurality of spacer lugs comprises a group of spacer lugs...with at least three of said plurality of spacer lugs selected from said group of spacer lugs and removably engaging said centralizer hub”.

Therefore, it is respectfully submitted that the amendment to claim 13 clarifies that the claimed

centralizer comprises a plurality of spacer lugs each of which is capable of removably and interchangeably engaging the centralizer hub, a group of spacer lugs which is comprised of the plurality of spacer lugs, and at least three of the spacer lugs which are selected from the group (by inference, the group may include more than three of the spacer lugs) and actually removably engage the centralizer hub in the claimed centralizer.

It will further be noted that the phrase, “with at least three of said plurality of spacer lugs removably engaging said centralizer hub” has been deleted from claim 20.

Accordingly, it is respectfully submitted that the amendments to claims 13 and 20 clarify the subject matter which applicant regards as the invention in the manner required by 35 U.S.C. 112, 2nd paragraph. Reconsideration and allowance of claims 13 and 20 is therefore respectfully solicited.

Claim rejections under 35 U.S.C. 102

Claims 1, 2, 9 and 22 were rejected under 35 U.S.C. 102(e) as being anticipated by Terry (US 6,516,877).

It is respectfully submitted that Terry fails to anticipate claims 1, 2, 9 and 22, as will be hereinafter set forth in detail.

Reference is made to MPEP 2131, which states, “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Terry fails to disclose invention of claims 1, 2 and 9

It is respectfully submitted that Terry fails to disclose a multi-unit centralizer comprising "...at least one spacer lug slidably and removably engaging each of [a] plurality of hub subunits", as set forth in amended claim 1, and therefore, defined by claims 2 and 9 as dependent therefrom.

On page 5 of the Office action, it was stated, "Terry discloses a multi-unit centralizer that includes...at least one spacer lug 20 removably engaging each of the subunits (Figure 4)".

However, it is respectfully submitted that the slides (20) of the Terry device are fixedly attached to the body (12) of the device and do not removably engage the body, as required by amended claim 1. Referring to col. 3, lines 45-48 of the Terry patent, it is stated, "By comparing FIG. 1 to FIG. 2, it can be seen that each of the slides 20 is affixed to body 12 by deforming the metal comprising body 12 into the groove 34 in the side surface 36 of the slides 20". Therefore, as shown in Figure 2 of the Terry patent, the metal comprising the body (12) is forced against the slide (20) at the score line (38) to fixedly or permanently attach the slides (20) to the body (12).

Furthermore, the slides (20) of the Terry device do not "slidably" engage the body (12), as required by amended claim 1. As shown in Figure 4 of the Terry patent, each of the slides (20) is the same length of the longitudinal groove (22) into which the slide (20) fits. Therefore, each slide (20) must be first aligned with and then inserted directly into the groove (22), after which the metal body (12) is deformed into the groove (34, Figure 2) in order to fixedly secure the slide (20) in the groove (34).

Accordingly, it is respectfully submitted that Terry fails to set forth "each and every element" set forth in amended claim 1 and defined by claims 2 and 9 as dependent from amended claim 1. Therefore, it is respectfully submitted that Terry fails to anticipate claims 1, 2 and 9 under 35 U.S.C.

102(e) according to the criteria set forth by the Federal Circuit in *Verdegaal Bros. v. Union Oil Co. of California* (cited hereinabove). Reconsideration and allowance of claims 1, 2 and 9 is therefore respectfully solicited.

Terry fails to disclose invention of claim 22

It is respectfully submitted that Terry fails to disclose a method comprising...”providing [a] plurality of spacer lugs on [a] centralizer hub by slidably and removably mounting at least one of said plurality of spacer lugs on each of said plurality of hub subunits...”, as set forth in amended claim 22, for the same reasons as were set forth herein above with respect to the rejection of claims 1, 2 and 9.

Accordingly, it is respectfully submitted that Terry fails to set forth “each and every element” set forth in amended claim 22, and thus, fails to anticipate amended claim 22 under 35 U.S.C. 102(e) according to the criteria set forth by the Federal Circuit in *Verdegaal Bros. v. Union Oil Co. of California* (cited hereinabove). Reconsideration and allowance of amended claim 22 is therefore respectfully solicited.

Claim Rejections under 35 U.S.C 103

Claims 3-8, 10-12, 18 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Terry in view of Evans (US 3,963,075).

It is respectfully submitted that Terry in view of Evans fails to render claims 3-8, 10-12, 18 and 19 obvious within the contemplation of 35 U.S.C. 103(a) on the grounds that Terry in view of Evans fails to teach or suggest all of the limitations of the claims, as will be hereinafter set forth in

detail.

Reference is made to MPEP 2143.03, which states, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art". *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Terry in view of Evans fails to teach invention of claims 3-8 and 10-12

It is respectfully submitted that Terry in view of Evans fails to render amended claim 1 obvious under 35 U.S.C. 103(a), and therefore, fails to render claims 3-8 and 10-12, as dependent from amended claim 1, obvious under 35 U.S.C. 103(a) (MPEP 2143.03).

As claims 3-8 and 10-12 depend from amended claim 1, and therefore, incorporate all of the limitations of amended claim 1, it is respectfully submitted that Terry in view of Evans fails to teach or suggest a multi-unit centralizer comprising "a centralizer hub including a plurality of hub subunits removably engaging each other; and at least one spacer lug slidably and removably engaging each of said plurality of hub subunits", as set forth in amended claim 1.

As was set forth herein above, Terry fails to disclose that the slides (20) of the Terry device slidably and removably engage the body (12) of the device. Rather, Terry teaches that the slides (20) are directly inserted into grooves (22) provided in the body (12), after which the slides (20) are fixedly or permanently mounted in the grooves (22).

Reference is made to col. 3, lines 21-23 of the Evans patent, where it is stated, "It can be appreciated that the elastomer body 20 is integral including the projections 40 thereon as well as the reinforcing rings 24 which are embedded therein". Therefore, Evans teaches that the projections (40) are integrally attached to the body (20) of the Evans device. Evans fails to teach or suggest that the

projections (40) may be adapted to “slidably and removably” engage the body (20), as required by amended claim 1, and also fails to set forth any advantage which may be attained by such an arrangement.

Therefore, it is respectfully submitted that Evans would fail to provide any teaching, suggestion or motivation to a person of ordinary skill in the art to modify the Terry device in such a manner that the slides (20) “removably and slidably” engage the body (12) of the Terry device.

Accordingly, it is respectfully submitted that Terry in view of Evans fails to teach or suggest all of the limitations of claims 3-8 and 10-12 as dependent from amended claim 1, and therefore, fails to render claims 3-8 and 10-12 obvious within the contemplation of 35 U.S.C. 103(a) according to the criteria for obviousness set forth by the appellate court in *In re Royka*. Reconsideration and allowance of claims 3-8 and 10-12 is therefore respectfully solicited.

Terry in view of Evans fails to teach invention of claims 18 and 19

It is respectfully submitted that Terry in view of Evans fails to teach or suggest a multi-unit centralizer comprising “a centralizer hub including a plurality of hub subunits...each having at least one clamp groove...a plurality of spacer lugs slidably and removably engaging said centralizer hub, each of said plurality of spacer lugs having at least one clamp slot for alignment with said at least one clamp groove as said each of said plurality of spacer lugs slides along said centralizer hub...”, as set forth in amended claim 18 and defined by claim 19 as dependent from amended claim 18.

Terry fails to teach or suggest that at least one clamp groove is provided each of the sections (12a, 12b) of the body (12) of the Terry device or that at least one clamp slot is provided in each of the slides (20) for alignment with at least one clamp groove in the sections. Furthermore, Terry fails

to disclose that the slides (20) of the Terry device “slidably and removably” engage the body (12) of the device, as required by amended claim 18.

Evans fails to teach or suggest that the projections (40) of the Evans device slidably and removably engage the body (20) of the device, but rather, teaches that the projections (40) are integral with the body (20) (col. 3, lines 21-23 of the Evans patent). Thus, the portions in the projections (40) through which the clamps (24) of the Evans device extend are fixed with respect to the body (20). Therefore, Evans fails to teach or suggest providing at least one clamp slot in a spacer lug and at least one clamp groove in a hub subunit in such a manner that the at least one clamp slot is aligned with the at least one clamp groove as the spacer lug slides along the body, as required by amended claim 18.

Therefore, it is respectfully submitted that Evans would fail to provide any teaching, suggestion or motivation to a person of ordinary skill in the art to modify the Terry device in such a manner that the slides (20) of the Terry device “removably and slidably” engage the body (12) of the device, and further, to provide at least one clamp groove in the body (12) and at least one clamp slot in the slides (20) in such a manner that the at least one clamp slot is aligned with the at least one clamp groove as the slides slide along the body. Furthermore, Evans fails to teach or suggest any advantage which would be attained by such a modification.

Accordingly, it is respectfully submitted that Terry in view of Evans fails to teach or suggest all of the limitations of amended claim 18 and claim 19 as dependent therefrom, and therefore, fails to render claims 18 and 19 obvious within the contemplation of 35 U.S.C. 103(a) according to the criteria for obviousness set forth by the appellate court in *In re Royka*. Reconsideration and allowance of claims 18 and 19 is therefore respectfully solicited.

Claims 13, 14, 17 and 23-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Terry in view of Tighe (US 4,076,084).

It is respectfully submitted that Terry in view of Tighe fails to render claims 13, 14, 17 and 23-26 obvious within the contemplation of 35 U.S.C. 103(a) on the grounds that Terry in view of Tighe fails to teach or suggest all of the limitations of the claims, as will be hereinafter set forth in detail.

Terry in view of Tighe fails to teach invention of claims 13, 14 and 17

It is respectfully submitted that Terry in view of Tighe fails to teach or suggest a multi-unit centralizer comprising “a centralizer hub...a plurality of spacer lugs capable of removably and interchangeably engaging said centralizer hub...wherein said plurality of spacer lugs comprises a group of spacer lugs including at least a first set of spacer lugs having a first radial dimension and a second set of spacer lugs having a second radial dimension smaller than said first radial dimension, with at least three of said plurality of spacer lugs selected from said group of spacer lugs and removably engaging said centralizer hub”, as set forth in amended claim 13 and defined by claims 14 and 17 as dependent from amended claim 13.

Terry fails to teach or suggest that the slides (20) of the Terry device are “capable of removably and interchangeably engaging” the body (12) of the device, as required by amended claim 13. In contrast, Terry teaches that the slides (20) of the Terry device fixedly engage the body (12) of the device, as was set forth herein above. Furthermore, Terry fails to teach or suggest that the slides (20) comprise a group of slides having various radial dimensions, with at least three of the slides selected from the group of slides and removably engaging the body (12), as further required

by amended claim 13.

Tighe fails to teach or suggest that the ribs (15, 15A, 16 and 16A) of the Tighe device are capable of “removably and interchangeably engaging” the outer member (10) of the device or that the ribs 15, 15A, 16 and 16A comprise a group of ribs from which at least three are selected to removably engage the outer member (10) of the device.

Therefore, it is respectfully submitted that Tighe would fail to provide any teaching, suggestion or motivation to modify the Terry device in such a manner that the slides (20) of the Terry device are capable of “removably and interchangeably” engaging the body (12) of the device and such that the slides (20) comprise a group of slides having various radial dimensions and from which at least three of the slides (20) can be selected to removably engage the body (12). Neither does Tighe set forth any advantage which would be attained by such an arrangement.

Accordingly, it is respectfully submitted that Terry in view of Tighe fails to teach or suggest all of the limitations of amended claim 13 and claims 14 and 17 as dependent therefrom, and therefore, fails to render claims 13, 14 and 17 obvious within the contemplation of 35 U.S.C. 103(a) according to the criteria for obviousness set forth by the appellate court in *In re Royka*. Reconsideration and allowance of claims 13, 14 and 17 is therefore respectfully solicited.

Terry in view of Tighe fails to teach invention of claims 23-26

It is respectfully submitted that Terry in view of Tighe fails to teach or suggest a method comprising “providing a multi-unit centralizer comprising a centralizer hub...providing [a] plurality of spacer lugs on said centralizer hub by slidably and removably mounting at least one of said plurality of spacer lugs on each of [a] plurality of hub subunits...”, as set forth in amended claim 23 and defined

by claims 24-26 as dependent from amended claim 23.

As was set forth herein above, Terry fails to teach or suggest that the slides (20) of the Terry device are “slidably and removably” mounted on the body (12) of the device.

Tighe fails to teach or suggest that the ribs (15, 15A, 16 and 16A) of the Terry device are “slidably and removably” mounted on the outer sleeve (10) of the device.

Therefore, it is respectfully submitted that Tighe would fail to provide any teaching, suggestion or motivation to modify the Terry device in such a manner that the slides (20) of the Terry device are “slidably and removably” mounted on the body (12) of the device, and further, fails to set forth any advantage which would be attained by such an arrangement.

Accordingly, it is respectfully submitted that Terry in view of Tighe fails to teach or suggest all of the limitations of amended claim 23 and claims 24-26 as dependent therefrom, and therefore, fails to render claims 23-26 obvious within the contemplation of 35 U.S.C. 103(a) according to the criteria for obviousness set forth by the appellate court in *In re Royka*. Reconsideration and allowance of claims 23-26 is therefore respectfully solicited.

Claims 15 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Terry in view of Tighe as applied to claim 13 above, and further in view of Evans.

It is respectfully submitted that Terry in view of Tighe and further in view of Evans fails to render claims 15 and 16, as dependent from amended claim 13, obvious within the contemplation of 35 U.S.C. 103(a).

As was set forth herein above with respect to the rejection of claims 13, 14 and 17, Terry in view of Tighe fails to teach or suggest all of the limitations of amended claim 13.

Evans fails to teach or suggest that the projections (40) of the Evans device are “capable of removably and interchangeably engaging” the body (20) of the device, as required by amended claim 13, and therefore, claims 15 and 16 as dependent from amended claim 13. In contrast, Evans teaches that the projections (40) of the Evans device are integral with the body (20) of the device, as is set forth in col. 3, lines 21-23 of the Evans patent. Furthermore, Evans fails to teach or suggest that the projections (40) comprise a group of projections having various radial dimensions, with at least three of the projections selected from the group of projections and removably engaging the body (20), as further required by amended claim 13.

Therefore, it is respectfully submitted that neither Evans nor Tighe would provide any teaching, suggestion or motivation to a person of ordinary skill in the art to modify the Terry device in such a manner that the slides (20) of the Terry device are capable of “removably and interchangeably” engaging the body (12) of the device and such that the slides (20) comprise a group of slides having various radial dimensions and from which at least three of the slides (20) can be selected to removably engage the body (12). Furthermore, the references fail to set forth any advantage which would be attained by such an arrangement.

Accordingly, it is respectfully submitted that Terry in view of Tighe and further in view of Evans fails to teach or suggest all of the limitations of amended claim 15 and claim 16 as dependent therefrom, and therefore, fails to render claims 15 and 16 obvious within the contemplation of 35 U.S.C. 103(a) according to the criteria for obviousness set forth by the appellate court in *In re Royka*. Reconsideration and allowance of claims 15 and 16 is therefore respectfully solicited.

Claims 20 and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Terry in

view of Evans as applied to claim 18 above, and further in view of Tighe.

It is respectfully submitted that Terry in view of Evans and further in view of Tighe fails to render claims 20 and 21, as dependent from amended claim 18, obvious within the contemplation of 35 U.S.C. 103(a).

As was set forth herein above with respect to the rejection of claims 18 and 19, Terry in view of Evans fails to teach or suggest all of the limitations of amended claim 18, and therefore, fails to teach or suggest all of the limitations of claims 20 and 21 as dependent from amended claim 18.

Tighe fails to teach or suggest that the ribs (15, 15A, 16 and 16A) of the Tighe device “slidably and removably” engage the outer sleeve (10) of the device. Therefore, Tighe further fails to teach or suggest providing at least one clamp slot in a rib and at least one clamp groove in the outer sleeve in such a manner that the at least one clamp slot is aligned with the at least one clamp groove as the rib slides along the outer sleeve, as required by amended claim 18.

Therefore, it is respectfully submitted that neither Evans nor Tighe would provide any teaching, suggestion or motivation to a person of ordinary skill in the art to modify the Terry device in such a manner that the slides (20) of the Terry device “removably and slidably” engage the body (12) of the device, and further, to provide at least one clamp groove in the body (12) and at least one clamp slot in the slides (20) in such a manner that the at least one clamp slot is aligned with the at least one clamp groove as the slides slide along the body. Neither do the cited references indicate any advantage which may be attained by such a modification.

Accordingly, it is respectfully submitted that Terry in view of Evans and Tighe fails to teach or suggest all of the limitations of amended claim 20 and claim 21 as dependent therefrom, and therefore, fails to render claims 20 and 21 obvious within the contemplation of 35 U.S.C. 103(a)

according to the criteria for obviousness set forth by the appellate court in *In re Royka*.
Reconsideration and allowance of claims 20 and 21 is therefore respectfully solicited.

Conclusion

Every effort has been made to amend applicant's claims in order to define his invention in the scope to which it is entitled. Accordingly, reconsideration and allowance of claims 1-26 is respectfully solicited.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "R. Keith Harrison", is written over a horizontal line.

R. Keith Harrison

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